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ABSTRACT

This paper discusses the campus climate as a critical element in the academic development of college students, with emphasis on minority and women students pursuing engineering and other technical degrees. Reforming the campus climate to make it more receptive to minority and women students requires: (1) a clear mandate from top administrators to build a supportive and enabling campus environment; (2) an understanding of the present conditions of the campus climate; and (3) more active involvement by engineering and science faculty in the academic life of minority students. Faculty may become more actively involved with students through mentoring, involving students in research, reducing the marginality of minority students, and representing the concerns and needs of minority students to campus-wide committees and groups. (Contains 9 references.) (MDM)

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Creating a Campus Climate that Supports Academic Excellence

by Howard G. Adams, Ph.D.

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To properly address the challenge of bringing minorities and women fully into our system of education, we must change the culture of engineering faculty.

Dr. William B. Streett
Dean of Engineering, Cornell

*Greetings to members of the administration, faculty, students, parents, alumni, corporate and governmental supporters, ladies and gentlemen.

I am delighted to be a part of the 20th year anniversary celebration for the Minority Engineering Program at the University of Missouri-Rolla. I want to congratulate Floyd Harris and his staff for the superb job they have done and continue to do to provide minority students with the opportunity to pursue engineering education. Through your commitment, dedication, hard work and caring spirit, the lives of many minority students have been improved and enriched.

A special thanks goes to the school of engineering for the honor of being invited to deliver the Harry William Lee Porth Distinguished Lecture this evening. I have labeled my talk "Creating A Campus Climate that Supports Academic Excellence."

Introduction

The future hopes and aspirations of today's young people are to be found in the classrooms of America's colleges and universities, such as the University of Missouri-Rolla, where training in scientific and technical disciplines can lead to new and challenging opportunities and career options.

As students seek an academic home in which to develop their potential, build self-esteem, and test their skills and abilities, the climate of support available on campus—advising, nurturing, mentoring, collegiality, etc.—becomes a critical element in determining which students will successfully complete their academic program. Campus climate is defined as the academic, social and cultural arena in which students live, study, develop, and mature while pursuing their life/career goals.

When the collegiate lives of minority and women engineering and science students (E/S) are viewed through the prism of the definition given, it should not come as a surprise to anyone that these students often experience difficulties coping. This is particularly true for those students who must function and study in a campus climate that is chilly, unsupportive, and often outright hostile to their needs and aspirations.

As we approach the twenty-first century, engineering education faces a number of formidable challenges. Among these is the issue of campus climate and its impact on the academic, social and personal development of students.

This discussion examines campus climate as a critical element in the academic development of all students with emphasis on minority and women students pursuing engineering and other technical degrees.

Present Conditions

The process through which scientific knowledge and laboratory protocol is transmitted is steeped in tradition. Each new generation of students beginning study in an E/S field, learn and develop under the tutelage and guidance of faculty and more senior students. Students new to the discipline learn terminology, laboratory protocol, theory, and expectations by mimicking and imitating the behavior and practices of faculty and other students.

Minorities, more than any other group, because of mistrust, prior negative experiences, and cultural differences, are less likely to imitate the behavior of their majority peers. Moreover, because many minority students spend excessive time seeking a "place to belong," they function peripheral to the academic process associated with E/S disciplines.

Studies and reports on minority participation in engineering education (Adams and Adams, 1993) identify a number of factors which contribute to the low retention and graduation of minority students (Figure 1).

Of the listed factors, minority students report that isolation (peripheralness to the E/S academic community) and low expectation (lack of respect for minority students' academic potential) work in tandem to marginalize them. Further, they report that because of these two experiences, it is very difficult to become a legitimate student. And without legitimacy, it is almost impossible to gain the confidence so necessary for full participation in the scholarship which is the hallmark of E/S education.

If this discussion sounds like one that might better be directed to the counseling staff, let me assure you that if they were my featured audience, I would deliver a similar message to them. For indeed, all constituent groups within the campus community have a vital role to play in ensuring that the campus climate supports and affirms all students.

Prescription for Reform

"There is growing awareness that a hospitable and nourishing campus climate is necessary to guarantee diversity in higher education institutions. Women and people of color need to work in an environment that promotes their professional growth and development. There is growing recognition of the significant role campus climate plays in

*This paper presented as the Harry William Lee Porth Distinguished Lecture on the occasion of the 20th Anniversary Celebration of the University of Missouri-Rolla Minority Engineering Program, September 24, 1994, Rolla, MO.

the retention of faculty, staff and students. In an era that emphasizes commitment to diversity, it is important to ensure commitment to an equitable and hospitable climate for all members of a campus community." — Denise Wilbur.

Figure 1

Factors that contribute to low retention and graduation of minority engineering students:

1. Isolation within the academic department.
2. Inadequate pre-collegiate preparation in math and science.
3. Lack of financial aid.
4. Poor understanding of E/S careers.
5. Shortage of E/S role models.
6. Ineffective study habits.
7. Inadequate faculty involvement in the academic life of students.
8. Ineffective counseling and advising.
9. Unsupportive campus climate.
10. Low expectations from faculty and peers.

What can be done? Who should do it? At what level should reform start? There are no simple answers. However, the hard truth is this: simply talking about changing the environment is an exercise in futility. What is required is a series of reforms that involves input from the total campus community. I will discuss three key recommendations for reforming the campus climate.

Essential to beginning any reform is a clear mandate from top administration to build a supportive and enabling campus environment. Such a mandate should flow from an understanding and conviction that the campus environment is the life blood from which all students find their place, grow, develop, and become viable. The academic growth and success of all students is directly linked to the availability of a supportive, affirming, and nurturing campus community.

Knowing the present conditions of the campus climate is the second recommendation for reform. Some questions to ask about the campus community:

- Are campus-wide guidelines in place and up-to-date on the kind of community the university desires to become?
- What are the backgrounds and/or skill levels of students who succeed versus those who fail?
- Are support staff adequately trained to understand and be sensitive to the needs—academic, social, informational, cultural, financial, etc.—of a diverse student body?
- What responsibility is placed on the faculty to ensure that institutional climate concerns are also faculty's concerns?
- What support systems are in place and institutionalized for students, who need assistance with academic, social, personal, financial, and spiritual issues?

This is certainly not an exhaustive list of questions, but it does provide a framework by which the campus community can examine present conditions.

My third and final element for reforming campus climate is more active involvement by E/S faculty in the academic life of minority students. Strategies faculty might use to address this issue fall into four critical areas:

1. Creating opportunities that reduce the marginality of minority students within the department.
2. Involving minority students in hands-on scientific investigation through apprenticeship undergraduate research experiences.
3. Nurturing the academic abilities and potential of minority students by becoming a mentor.
4. Representing the concerns and needs of minority students on university wide committees and policy review groups.

In my talks with administrators and faculty I am often challenged on my call for reform on the grounds that my recommendations may appear to some as asking for special treatment for minority and women students. My response to this challenge is:

- there is nothing special about being accepted as a legitimate E/S major who has potential for academic success—all students need this;
- there is nothing special about needing assistance with course choice and career plans—many students need this;
- there is nothing special about expecting to receive sound, constructive and critical advise free of judgmental bias—this should be the norm for all student/faculty interactions;
- there is nothing special about having supportive faculty

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and student colleagues—this is the very meaning of collegiality;

- indeed, there is nothing special about looking to the campus community for services to meet students' needs—this is the real mission of higher education.

So let me be very straight forward: I am not asking for special treatment for minority students. Rather, I am asking the campus community to meet the needs of minority and women students in the same way and with the same professionalism that the needs of all other students are met. I am asking that such concern and professionalism be nothing more than a proactive expression of your desire to help each student realize her/his full potential.

Concluding Thoughts

E/S disciplines are demanding for most students. Present conditions on most campuses negatively impact minority E/S students more severely than other students. Findings on participation and success in E/S fields show that positive actions to nurture and affirm the academic abilities of each student pays the greatest dividends.

To solve the complex problem of building a supportive and enabling environment for all students will require a change from status quo. Further, these findings indicate that for any reform to really work, radical change in the attitudes and actions of top administration and the faculty regarding their responsibilities in defining the university's mission to meet the educational needs of all students is required.

Why is it such an imperative that university communities heed this call? Simply put, a chilly climate, one that is unsupportive and that offers little nurturing to fully develop each student, remains the greatest inhibitor to the participation and success of E/S students, especially minority and women students. If we are to create a campus climate that is responsive to all students we must 1) have a clear mandate from top administration to build a supportive and enabling campus environment; 2) know the present conditions of the campus climate; and 3) seek more active involvement by E/S faculty in the academic life of minority and women students.

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For a more in-depth discussion of campus climate, Dr. Adams has written *Focusing on the Campus Milieu: A Guide for Enhancing the Graduate School Climate*, which can be ordered from the GEM Center. Other articles by Dr. Adams are available, including *Successfully Negotiating the Graduate School Process: A Guide for Minority Students; Mentoring: An Essential Factor in the Doctoral Process for Minority Graduate Students; Making the Grade in Graduate School: Survival Strategy 101*; and co-authored with Stephanie G. Adams *Techniques for Effective Undergraduate Mentoring: A Faculty/Student Guide*. For ordering information on these publications and education related videotapes, contact the GEM Center.

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